

Abstract

A pulse tube refrigerator that is small in size and free from vibration and electric noise. A pulse tube refrigerator (1) has a pulse tube, a cool storage unit connected to the low- temperature side of the pulse tube, a vibration generator connected to the high-temperature side of the cool storage unit, and a reservoir with an orifice, connected to the high-temperature side of the pulse tube. The vibration generator is a thermally driven pressure wave generator having thermal drive tubes (heat exchangers (4-4a) for heat radiation), a phase shifter (7), and a return path (6). Sufficiently heating a heat exchanger (3) for heating causes self-exciting vibration to be generated in a work transmission tube (5), and work is returned to the thermal drive tubes through the phase shifter (7) and the return path (6) arranged on the work output side of the work transmission tube (5). The work is amplified by the thermal drive tubes, and is then outputted from the work transmission tube (5) and fed to the pulse tube refrigerator (1). A vibration generator for a pulse tube refrigerator that is small in size and free from vibration and noise can be realized.